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Transmitted herewith for filing is the Patent Application/of:

Inventors: Uwe Hansmann, Lothar Merk and Thomas Stober

For: CONTROLLED USE OF DEVICES
Enclosed are:

__X__   2 (two) Sheets of Formal Drawings.

_____   An assignment of the invention to International Business Machines
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_____   A certified copy of a _____ application.

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Respectfully submitted,

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1   **CONTROLLED USE OF DEVICES**

2   <u>1. BACKGROUND OF THE INVENTION</u>

3   <u>1.1 AREA OF THE INVENTION</u>

4   The present invention relates to method and system for

5   controlling the use of devices which are controlled by an

6   electric or an electronic circuit. In particular, the present

7   invention relates to such method and system for selectively

8   controlling specific types of operation of such devices.

9   <u>1.2 DISADVANTAGES OF PRIOR ART</u>

10   The above mentioned term 'device' should be understood in context

11   with the inventive concepts presented in here as very broad and

12   general. Basically, a broad variety of devices can be subjected

13   to the method of the present invention and their use or their

14   operation can be selectively controlled by it.

15   In general, many electronically controllable devices are provided

16   with an on/off switch in order to enable the device for

17   operation. If the use of a device is sensible for questions of

18   data security or access, in general, the device is protected with

19   an access control system which a person intending to use the

20   device has to pass prior using it.

21   For example, a prior art method and system for controlling the

22   personal use of a device can be a TV device being connected to a

23   Pay-TV channel access system via a set-top box. The Set-top box

24   acts as an access control system and provides card reader unit

1 for authenticating any registered user. After being identified a
2 user can freely access the Pay-TV channels.

3 A disadvantage of this kind of control can be seen in the fact,
4 that the use of the device is either admitted – in total – or it
5 is restricted in total. There are not provided any possibilities
6 of defining selected types of operation and specifying individual
7 constraints of usage for a specific device. Such sophisticated
8 access control logic would require intelligent back-end systems
9 with some sort of a user management system. The possibility to
10 allow a selected type of operation and certain constraints of
11 usage, however, is desirable for devices in many cases –even in
12 such cases in which a device is not provided with any access
13 control system and no user management infrastructure at all. For
14 example, a common TV device can only be locked into a cupboard,
15 so the access to the TV is prevented generally, when the cupboard
16 is locked, and such desired selective type of device operation is
17 only possible with an adult person surveying the children's
18 TV-channel selection.

19 In this case, however, the use of the TV device would be desired
20 for children only during predetermined intervals of time, at
21 specific days and on specific channels, in addition only a
22 specific total time of watching television in a week could be
23 desirable.

24 Different devices have always different procedures of controlling
25 their operation. In case of a car sharing company it is difficult
26 to control the duration of time in which the car is used by a
27 client. As the duration of such use can be considered as a basic
28 requirement for the client's bill an exact determination of said
29 duration of device operation would be desirable.

1 <u>1.3 OBJECTS OF THE PRESENT INVENTION</u>

2 It is thus a general aim of the present invention to provide a

3 method and system for controlling the personal use of devices the

4 operation of which is controllable by an electronic control

5 circuit in which the method allows some kind of user-related

6 and/or user-initiated selection of different types of operation

7 of the respective device whenever more than one type of operation

8 is provided for the device or makes sense with the device.

9 It is a further object of the present invention to provide such

10 decentralized method and system such that using the method or

11 system will be comfortable for the user and universally to apply

12 for a plurality of devices of the same type without needing to

13 establish a sophisticated user management infrastructure.

14 <u>2. SUMMARY AND ADVANTAGES OF THE PRESENT INVENTION</u>

15 According to the invention a method and system for selectively

16 controlling the operation of the device is provided which uses

17 some kind of personal authentication token, e.g., a JAVACard

18 connected to said device in order to control a particular type of

19 use or the duration of use of the device, and - if desired - in

20 order to interrupt the operation of the device or to delimit the

21 operation when some kind of reason can be evaluated from some

22 operation type specific or some user-related data stored in said

23 card which might justify said decision.

24 According to a preferred aspect of the present invention said

25 token or, generally spoken, an authentication means is

26 advantageously a Smartcard and in particular a Java Card, or any

1 other multi function smart card with the capability of
2 downloading and executing software programs on the card, on which
3 personal authentication data as well as some kind of account data
4 are stored. Said account can be a time account in which the
5 duration of the personal use and/or operation of the device is
6 maintained and regularly compared to some predetermined time
7 limits admitted to the user.

8 A large variety of further criteria storable on the card emerge
9 dependent of the type of the device. In case of a TV device the
10 Smartcard advantageously holds program data which specify date
11 and time during which a child for example is allowed to watch the
12 program of some predefined TV channels. Alternatively, some film
13 rating data can be stored on the card and can be subjected to an
14 evaluation which uses amongst others further data as, for
15 example, the age of the child the Smartcard is associated with in
16 order to provide a result if a user-selected, e.g. child-selected
17 type of operation will be admitted to the child or not. In
18 addition to that an identifier for a specific TV show could be
19 stored, which the user is permitted to watch. Many further
20 limitations of use are obvious such as, for example, the
21 limitation of the duration of use.

22 According to a further preferred aspect of the present invention
23 the logic which evaluates the above mentioned data is located at
24 least partly on the Smartcard and provides a device operation
25 control logic with a signal which is able to filter some admitted
26 types of operation – if desired. An advantage of this solution is
27 that one Smartcard can be used for a plurality of different
28 devices holding the hardware extensions required for the devices
29 on a minimum level. Thus, the overall costs for the system
30 consisting of Smartcards and a plurality of devices is held low.

1 According to a further preferred aspect of the present invention
2 the Smartcards belonging to the users are programmable by a
3 Master-SmardCard. Dependent of the type of device any criteria
4 can be stored on the Smartcards subordinated to said
5 Master-SmartCard by aid of a program which can only be invoked
6 when a user invokes it who has run successfully an authentication
7 procedure which acknowledges his status as a superuser.

8 For the sake of improved security further security mechanisms may
9 be provided with this solution as, for example, input and control
10 of a superuser-ID and an associated password, as it is known in
11 prior art.

12 The preferred location of said program depends on the type of the
13 device and depends further on the complexity of operation
14 control. It can be located on the devices, programmed in a ROM
15 memory as a part of an electronic circuit connectable with the
16 Smartcard reader associated to the device.

17 It is obvious that for example for the sake of economy of the
18 total control system the composition of the arrangement - i.e.,
19 the plurality of controllable devices, the plurality of
20 subordinated Smartcards, the plurality of Master-Smartcards, the
21 spatial or geographic distance between the devices, the business
22 value of the devices, the costs for equipping already existing
23 devices with the hardware and software system according to the
24 present invention, etc. have to be considered carefully in order
25 to implement an individual 'best-fit' solution.

26 Further, the control logic can be distributed on more than one
27 location, i.e. a part of it can be located on the Smartcard,

1 another part can be located for example as a hardware

2 implementation of a piece of software in the device itself

3 according to the above mentioned criteria.

4 A general advantage of the present invention's concepts is that

5 the control system is very flexible such that the use of a device

6 can be individually controlled according to a plurality of device

7 specific criteria. When all data which is necessary to control

8 the operation of one or a plurality of devices are stored on the

9 user-associated Smartcard it is sufficient to provide each user

10 with one Smartcard only, instead of a variety of cards for

11 respective devices. Then, only one Smartcard per user is

12 applicable and insertable into Smartcard readers corresponding to

13 a respective plurality of devices without being obliged to

14 transfer personal, operation-related data from one device to the

15 next. In other words, in a family where are three TV devices one

16 child needs only one Smartcard and not one Smartcard for each TV

17 device. The total duration of watching TV which was limited

18 before for the child is stored and updated according to the

19 child's TV consumption in the memory of the child's card -

20 independent of the number of TV devices used by the child.

21 Further, when the logic is concentrated on the Smartcard, any

22 changes related to the hardware of the device do not influence

23 the operation of the control system. And finally, when the logic

24 of the criteria is changed the devices need not to be changed in

25 the most cases.

26 3. BRIEF DESCRIPTION OF THE DRAWINGS

1 The present invention is illustrated by way of example and is not
2 limited by the shape of the figures of the accompanying drawings
3 in which:

4 Fig. 1 shows an example schematic block diagram comprising the
5 most relevant components of a preferred embodiment of the present
6 invention in form of a TV device the operation of which is
7 controlled according to the present invention's method, and

8 Fig. 2 is a flow chart showing the basic steps and decisions of a
9 preferred embodiment of the method of the present invention when
10 a user wants to watch TV with reference to the system depicted in
11 Fig. 1.

12 4. DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

13 With reference to Fig. 1 an example arrangement according to the
14 present invention is shown with which the inventive method can be
15 performed in order to control the personal use of a TV device. A
16 TV device 10 is connected with and controlled by an electronic
17 control circuit 12 incorporated in its casing. The electronic
18 circuit 12 is able to control the operation of the TV device such
19 that it can switch it on or off in order to let the user watch
20 the current programs available.

21 According to the present invention the electronic control circuit
22 12 is connected to a Smartcard reader 14 which can read and
23 process data and commands provided from a Smartcard 16 inserted
24 therein. Said Smartcard is assumed to belong to a certain user
25 who is a child of eleven years living in a family and a household
26 having a plurality of three TV devices in total. According to the

1 principles of the present invention it is some aim of it to

2 control the personal use of devices, such as the TV device

3 depicted in Fig. 1. In order to be able to exhibit this function

4 said Smartcard 16 has stored in its memory a user ID associated

5 with the child and a list of TV emissions which the parents allow

6 to be watched by the child. Further, there is stored a time

7 account which reflects the total duration of time in which the

8 child watches TV during a predetermined time interval, e.g., one

9 week. For example, the child is allowed to watch TV for a total

10 duration of 180 minutes per week. Further, there is stored in the

11 memory of the Smartcard some additional data which serves as

12 additional criteria in order to restrict the child from watching

13 TV late in the evening, for example to prevent the child from

14 watching some films showing too much of violence, sex, crime,

15 etc.

16 Further, the Smartcard is provided with an integrated

17 microprocessor and advantageously with some Smartcard

18 application, so-called applets, in order to process the data

19 stored in its memory and to compare them with data read from the

20 TV device. This, however is described in more detail with

21 reference to Fig. 2 later below.

22 With reference back to the electronic control circuit 12

23 connected to the TV device 10, said circuit is connected to a

24 filter 22 which is interconnected between the antenna or video

25 recorder, in general, between program source and the input port

26 for the TV signal.

27 The electronic control circuit 12 can be incorporated into the

28 casing of the TV device, as well as the filter 22. Alternatively,

1   one of them, or both can be put into a small box to be connected

2   with the TV and a Smartcard reader unit.

3   Alternatively, the Smartcard Reader 14 and the control circuit 12

4   and the filter 22 can be incorporated in the TV device, as well

5   as assembled in said box connectable with the TV device. Or, the

6   Smartcard reader 14 could be excluded from the arrangement 24

7   such as being external to it for improve flexibility. This is

8   depicted in Fig. 1 with the arrangement 24 surrounded by broken

9   lines. The communication between arrangement 24 and the Smartcard

10 reader 14, or connector for any other secure token, could be

11 secured by the use of encryption for the data transmitted as well

12 as by sealing the physical connectors.

13 In any of the above mentioned variations some connection between

14 the remote control unit associated with the TV device will be

15 advantageously provided in order to let the user comfortably

16 select the channel, etc. by aid of the remote control unit.

17 In order to do this, the box is provided with an infrared sensor

18 and a respective signal receiving unit in order to receive the

19 control signal from the remote control unit and pass it to the

20 electronic control circuit for processing which is described in

21 more detail later below with reference to steps 170, 180,... of

22 Fig. 2.

23 Alternatively, the signal from the remote control unit can be

24 received by the sensor circuit incorporated in the TV. Then,

25 however, at most the channel-select signal is fed from said

26 circuit to the electronic control device external to the TV for

27 performing the same evaluation as stated above.

1   Advantageously, any electrical connection between said external

2   arrangement 24 and the TV device as well as the Smartcard reader

3   can be sealed in order make any interruption or switch off of the

4   arrangement 24 visible to the parents of the child.

5   With additional reference now to **Fig. 2** a preferred embodiment of

6   the inventive method will be described in more detail which will

7   illustrate as well the operation of the inventive arrangement

8   depicted in Fig. 1.

9   The eleven year old child wants to start watching TV. Thus he

10   inserts his personal Smartcard 16 into the Smartcard reader 14 in

11   a step 110. In this particular embodiment the on/off switch of

12   either the TV device itself or that of the remote control can be

13   operated only when a Smartcard is inserted into said Smartcard

14   reader. Thus, an activation signal is fed from an operation

15   control logic circuit 28 placed on the Smartcard, in order to

16   activate the electronic control circuit 12 for preparing the

17   begin of operation of the TV device. Said activation signal is

18   fed via line 30.

19   Activation is further confirmed to said operation control logic

20   28 via a line 32 connected between electronic control circuit 12

21   and Smartcard reader 14 as well. This is depicted in Fig. 1.

22   Next, in a step 120 some current operation specific data, further

23   referred to as SOD is read from the device into the control logic

24   28 in order to be processed by said logic. In this particular

25   case said SOD comprises current date and current time. Further,

26   it comprises a flag, indicating if a video signal from a video

27   recorder possibly connected with the TV device is present on its

28   signal input line.

1 Next, in a step 130, so called 'user-specific data' further
2 referred to as US are read from the Smartcard memory 34 in order
3 to identify the person intending to watch TV. At least, said US
4 comprises a unique user-ID, at least unique in the family. Thus,
5 the control logic 28 recognizes, that the eleven year old child
6 wants to start watching TV.

7 In order to perform the selectively controlled use of the TV
8 device said logic 28 pre-evaluates in a step 140 US and SOD
9 according to some preprogrammed data and with the help of some
10 applet stored in the memory 34 of the Smartcard. In particular,
11 during said pre-evaluation it is checked for a decision 150 if
12 there is time enough resting on the time account of the card, and
13 the current time of day is checked as well. If it is too late in
14 the evening or during the night, or if there is no more time left
15 in the time account, the card is ejected - step 160 - from the
16 slot and watching TV is prohibited. If yes, the child is
17 basically allowed to watch TV and can select a TV-channel -step
18 170 described in more detail below. A more specific and selective
19 evaluation of the user's choice will be performed after said
20 selection of TV input, i.e., the TV channel number or the
21 actuation of a switch for input of a video signal from a
22 connected video recorder.

23 Said preprogrammed data was programmed before by the child's
24 parents, e.g., using a mastercard provided with a secret key only
25 known to the parents in order to provide the child's Smartcard
26 with data describing and determining TV emissions which he is
27 allowed to watch. In particular, advantageously a TV channel
28 number and associated emission time, or, alternatively, the show
29 view code of emissions can be stored on the card, and it can be

1 specified if watching it shall be allowed to the child or not. If

2 the evaluation yields that there is an emission which the child

3 is allowed to watch, in a step 150 a corresponding

4 'device-enable' signal is fed from the control logic 28 into the

5 electronic control circuit 12 in order to prepare the TV device

6 for operation.

7 With reference to step 170 a user action is expected. The user

8 action can for example be pushing a respective channel-select

9 button located on the remote control of the TV device, or,

10 alternatively, pressing the corresponding button on the device's

11 operation console. Further, said user action can be pressing the

12 button which selects a video recorder connected to the TV device.

13 Any of them is understood for the purposes of the present

14 invention's disclosure as a 'User-Desired Operation Item',

15 further referred to as UDOI. It is assumed now that the user

16 presses the channel-select button 2 on the remote control. Thus,

17 a UDOI is defined. Further, it shall be assumed that the current

18 time is 3.30 p.m.

19 The electronic control circuit 12 feeds back the user's choice to

20 the operation control logic 28 placed on the Smartcard 16 via

21 line 32 and said signal is read in a step 170 by said control

22 logic. An algorithm preprogrammed in said operation control logic

23 28 compares the user choice with the list of admitted operation

24 items which were in turn preprogrammed before by the parents of

25 the child. In practice, such an evaluation 170 can be performed

26 by a plurality of 'IF'-statements which are checked subsequently.

27

28 Then, in a decision 180 a YES-or RELEASE-signal is output when

29 there is found a film inside the allowed film list and the

1 selected UDOI is released, the film can be watched as depicted in
2 step 190. Or, in the no-branch of decision 180 the desired
3 operation item (UDOI) of the TV device is restricted -step 200,
4 if no pair of channel-number and current time fits to the allowed
5 list data stored on the child's Smartcard.

6 Then, the system is ready for further user inputs, for example in
7 order to change the program channel or to switch off the TV
8 device.

9 When the child watches TV the time account stored on the
10 Smartcard is updated regularly in periodic intervals of time, as
11 e.g. every one minute. To do this, the output of a timer device
12 not depicted in Fig. 1 is regularly read by the operation control
13 logic 28 via line 30, and the time data is fed via line 32 to the
14 logic 28, which in turn accumulates the time spent for watching
15 TV on the time account of the child.

16 If, for example, the maximum time which the child was admitted to
17 watch TV has exceeded, the operation of the TV will be broken.
18 Some warnings can be put out via the screen of the TV device at
19 regular intervals in order to prepare the child and to inform it
20 before the operation is switched off.

21 It is obvious that the inventive concepts are very broadly
22 applicable. The devices mentioned in the text of the present
23 application can be any device having an electronic or electric
24 control circuit which switches the operation on or off, or,
25 depending of the type of the device, which enables a specific,
26 selective type of operation of that device. Examples of specific
27 operation types or operation items are:

1 selecting a particular channel-number for watching TV, selecting
2 a video recorder for feeding the input-signal for the TV.
3 Further, when the device is a computer said selected type of
4 operation can advantageously be the invocation of one of a subset
5 of programs installed on the hard-disk of the computer itself or
6 in the network to which a computer is connected with.

7 When the device is a car belonging to a car sharing company the
8 duration of use can be easily controlled by the company. In this
9 example, however, there is generally only one type of operation
10 of the car, i.e. to go with the car with a running motor. In this
11 example however, an extension can be included when the car is
12 coupled to the GPS-system which enables the car sharing company
13 to control the position of the car and, eventually the direction
14 in which it is moved on a large scale. Then, a second type of
15 operation could be established, namely, not to enter into a
16 predetermined geographical region, or, to move the car only in
17 predetermined large scale-directions. The same applies of course
18 for companies which are renting cars to people.

19 The inventive method can be advantageously applied even for
20 allowing selective use of operation of a plurality of computers.
21 This can be required in a company having many employees and a
22 large number of desktop computers and notebooks forming a part of
23 the company's network, when the employees have often to change
24 their desks and are constraint to make their job with the help of
25 different computers, i.e., they use not a personal computer, but
26 an 'unpersonalized' form by that kind of rotation of working
27 sites. In this exemplary situation, the access to the computer's
28 programs or local disk areas can be selectively allowed, or
29 restricted, respectively, while the data for doing said are
30 stored on the card only and not in the computer.

1 The present invention can be realized in hardware, software, or a
2 combination of hardware and software. A typical combination of
3 hardware and software could be a Smartcard with an applet or any
4 other software running on the Smartcard in more or less close
5 interaction with a piece of software implemented in the device or
6 associated to it, that, when being executed, controls the
7 Smartcard such that it carries out the methods described herein.
8 The present invention can also be embedded in a computer program
9 product, which comprises all the features enabling the
10 implementation of the methods described herein to SmartCards in
11 order to upgrade them in order to carry out the inventive method
12 as a whole or partly. Computer program means or computer program
13 in the present context mean any expression, in any language, code
14 or notation, of a set of instructions intended to cause a system
15 having an information processing capability to perform a
16 particular function either directly or after either or both of
17 the following a) conversion to another language, code or
18 notation; b) reproduction in a different material form.

19 In the foregoing specification the invention has been described
20 with reference to a specific exemplary embodiment thereof. It
21 will, however, be evident that various modifications and changes
22 may be made thereto without departing from the broader spirit and
23 scope of the invention as set forth in the appended claims. The
24 specification and drawings are accordingly to be regarded as
25 illustrative rather than in a restrictive sense.

26 In particular, the control logic required to perform the
27 selective operation types of the device can be located in the
28 Smartcard - or it can be distributed between Smartcard and the

1   device, or, if suited, it can be combined with any logic being

2   installed on the interface means, as e.g., the Smartcard reader.

3   Further, the inventive concepts are obviously extendible with

4   mechanisms in order to update the user's authentication means as

5   e.g. a Smartcard with new data – e.g. for refreshing the time

6   account, or for automatically load new show-view Codes for

7   admitted emissions.

8   Further, account data can comprise cash data, too. Cash data can

9   be updated by any mechanism suited, as e.g. in cooperation with a

10 banking software, a cash dispenser, etc., or in direct contact

11 with the owner of the devices to be controlled. Thus, it is

12 possible to allow a selective use of the device only when the

13 user has paid for it.

14 It is obvious that many scenarios exist in which combinations of

15 one or more of the before mentioned aspects combine in order to

16 provide a best-fit solution of the inventive concepts. It is

17 thus noted that the foregoing has outlined some of the more

18 pertinent objects and embodiments of the present invention. This

19 invention may be used for many applications. Thus, although the

20 description is made for particular arrangements and methods, the

21 intent and concept of the invention is suitable and applicable to

22 other arrangements and applications. It will be clear to those

23 skilled in the art that other modifications to the disclosed

24 embodiments can be effected without departing from the spirit and

25 scope of the invention. The described embodiments ought to be

26 construed to be merely illustrative of some of the more prominent

27 features and applications of the invention. Other beneficial

28 results can be realized by applying the disclosed invention in a

1 different manner or modifying the invention in ways known to

2 those familiar with the art.

3 The objects of the invention are achieved by the features stated

4 in enclosed independent claims. Further advantageous arrangements

5 and embodiments of the invention are set forth in the respective

6 dependent claims.

2   Having thus described our invention, what we claim as new and
3   desire to secure by Letters Patent is as follows:

4   1.   A method for controlling personal use of a device having
5   operation which is controllable by an electronic control
6   circuit, the method comprising the steps of:

7   reading user-related data from a user-associated user
8   authentication means for processing by a device operation
9   control logic,

10   the method being characterized by

11   said user-related data comprising selective information
12   concerning a user-desired type of operation of said device,

13   reading operation type specific data from said device for
14   processing by said device operation control logic,

15   processing both data for providing a result,

16   deciding according to said result if a user-desired type of
17   operation of said device will be allowed or not, and

18   enabling or preventing said desired type of operation of
19   said device according to said decision.

20   2.   The method according to claim 1, in which said step of
21   processing user-related data and operation type specific

1   data is performed at least partly on said user-associated

2   authentication means by means of computing resources

3   comprised of said user-associated authentication means.

4 3. The method according to claim 1, comprising the step of

5   comparing current time information read from said device to

6   predetermined time limits stored on said user authentication

7   means for delimiting the duration of operation of said

8   device.

9 4. The method according to claim 1, for selectively controlling

10   operation of TV devices where the step of reading operation

11   type specific data comprises reading at least one of:

12   current date, current time, available channels,

13   show-view-codes.

14 5. The method according to claim 1, used for selectively

15   controlling operation of cars where the step of reading

16   operation type specific data comprises reading at least one

17   of: current date, current time, geographic position via a

18   GPS-interface, accumulated duration of use in a

19   predetermined time interval.

20 6. The method according to claim 1, for selectively controlling

21   operation of at least one computer device.

22 7. A device, the operation of which is controllable by an

23   electronic control circuit and being used as a controllable

24   object according to the method according to claim 1.

1　8.　A user-authentication means arranged for interaction with an
2　　　operation control logic for a device according to claim 7,
3　　　for use in the method according to claim 1.

4　9.　The user-authentication means according to claim 8, being
5　　　incorporated in a Smartcard.

6　10.　The user-authentication means according to claim 9, wherein
7　　　said Smartcard being selected from a Java Card, a Smart Card
8　　　for Windows, or a Smart card based on the Multos operating
9　　　system.

10　11.　Interface means comprising connection means to an electronic
11　　　control circuit controlling the operation of a device
12　　　according to claim 7 and intended for performing the method
13　　　steps comprising:

14　　　reading user-related data from a user-associated user
15　　　authentication means for processing by a device operation
16　　　control logic,

17　　　the method being characterized by

18　　　said user-related data comprising selective information
19　　　concerning a user-desired type of operation of said device,

20　　　reading operation type specific data from said device for
21　　　processing by said device operation control logic,

22　　　processing both data for providing a result,

1   deciding according to said result if a user-desired type of
2   operation of said device will be allowed or not, and

3   enabling or preventing said desired type of operation of
4   said device according to said decision.

5   12.   An interface means according to claim 11, arranged for
6   communicating with user-authentication means arranged for
7   interaction with an operations control logic.

8   13.   Interface means according to claim 12, characterized by
9   being a Set-top box for being added-on a device being
10   subjectable to the method steps.

11   14.   A system comprising means for performing the method steps
12   according to claim 1.

13   15.   An article of manufacture comprising a computer usable
14   medium having computer readable program code means embodied
15   therein for causing controlled personal use of a device
16   having operation which is controllable by an electronic
17   control circuit, the computer readable program code means in
18   said article of manufacture comprising computer readable
19   program code means for causing a computer to effect the
20   steps of claim 1.

21   16.   An article of manufacture comprising a computer usable
22   medium having computer readable program code means embodied
23   therein for causing controlled personal use of a device
24   having operation which is controllable by an electronic
25   control circuit, the computer readable program code means in
26   said article of manufacture comprising computer readable

1   program code means for causing a computer to effect the
2   steps of claim 2.

3   17.   An article of manufacture comprising a computer usable
4   medium having computer readable program code means embodied
5   therein for causing controlled personal use of a device
6   having operation which is controllable by an electronic
7   control circuit, the computer readable program code means in
8   said article of manufacture comprising computer readable
9   program code means for causing a computer to effect the
10   steps of claim 3.

11   18.   A program storage device readable by machine, tangibly
12   embodying a program of instructions executable by the
13   machine to perform method steps for causing controlled
14   personal use of a device having operation which is
15   controllable by an electronic control circuit, said method
16   steps comprising the steps of claim 1.

17   19.   A program storage device readable by machine, tangibly
18   embodying a program of instructions executable by the
19   machine to perform method steps for causing controlled
20   personal use of a device having operation which is
21   controllable by an electronic control circuit, said method
22   steps comprising the steps of claim 4.

23   20.   A program storage device readable by machine, tangibly
24   embodying a program of instructions executable by the
25   machine to perform method steps for causing controlled
26   personal use of a device having operation which is
27   controllable by an electronic control circuit, said method
28   steps comprising the steps of claim 5.

1   CONTROLLED USE OF DEVICES

2   ABSTRACT

3   According to the invention a method and system for selectively
4   controlling the operation of a device intended by a person is
5   provided which uses some kind of personal authentication token,
6   e.g., a JAVACard connected to said device in order to control a
7   particular type of use or the duration of use of the device, and
8   - if desired - in order to interrupt the operation of the device
9   or to delimit the operation when some kind of reason can be
10 evaluated from some operation type specific or some user-related
11 data stored in said card which might justify said decision.
12 According to a preferred aspect of the present invention said
13 token or, generally spoken, an authentication means is
14 advantageously a Smartcard and in particular a Java Card, or any
15 other multi function Smartcard with the capability of downloading
16 and executing software programs on the card, on which personal
17 authentication data as well as some kind of account data are
18 stored. Said account can be a time account in which the duration
19 of the personal use and/or operation of the device is maintained
20 and regularly compared to some predetermined time limits admitted
21 to the user. A large variety of further criteria storable on the
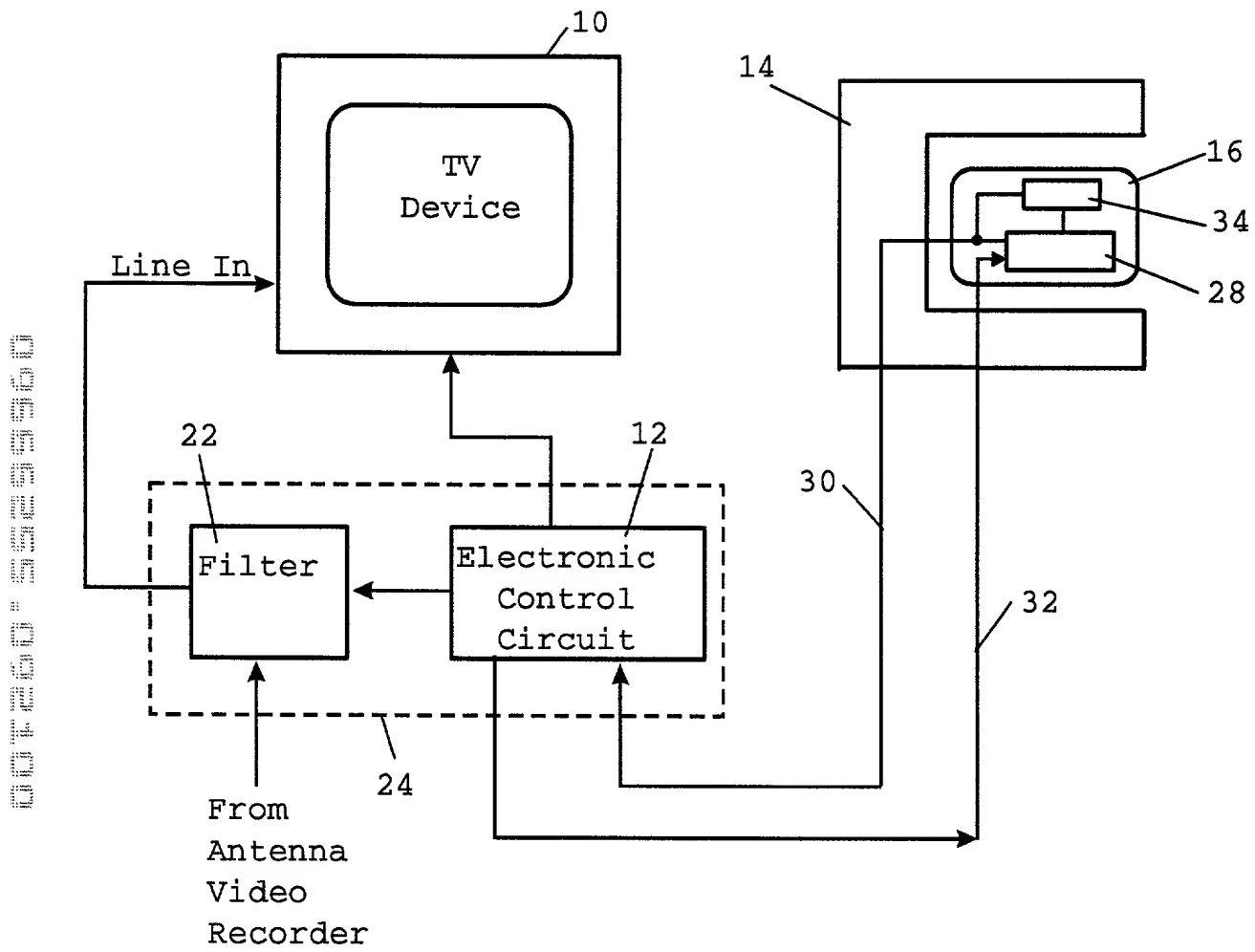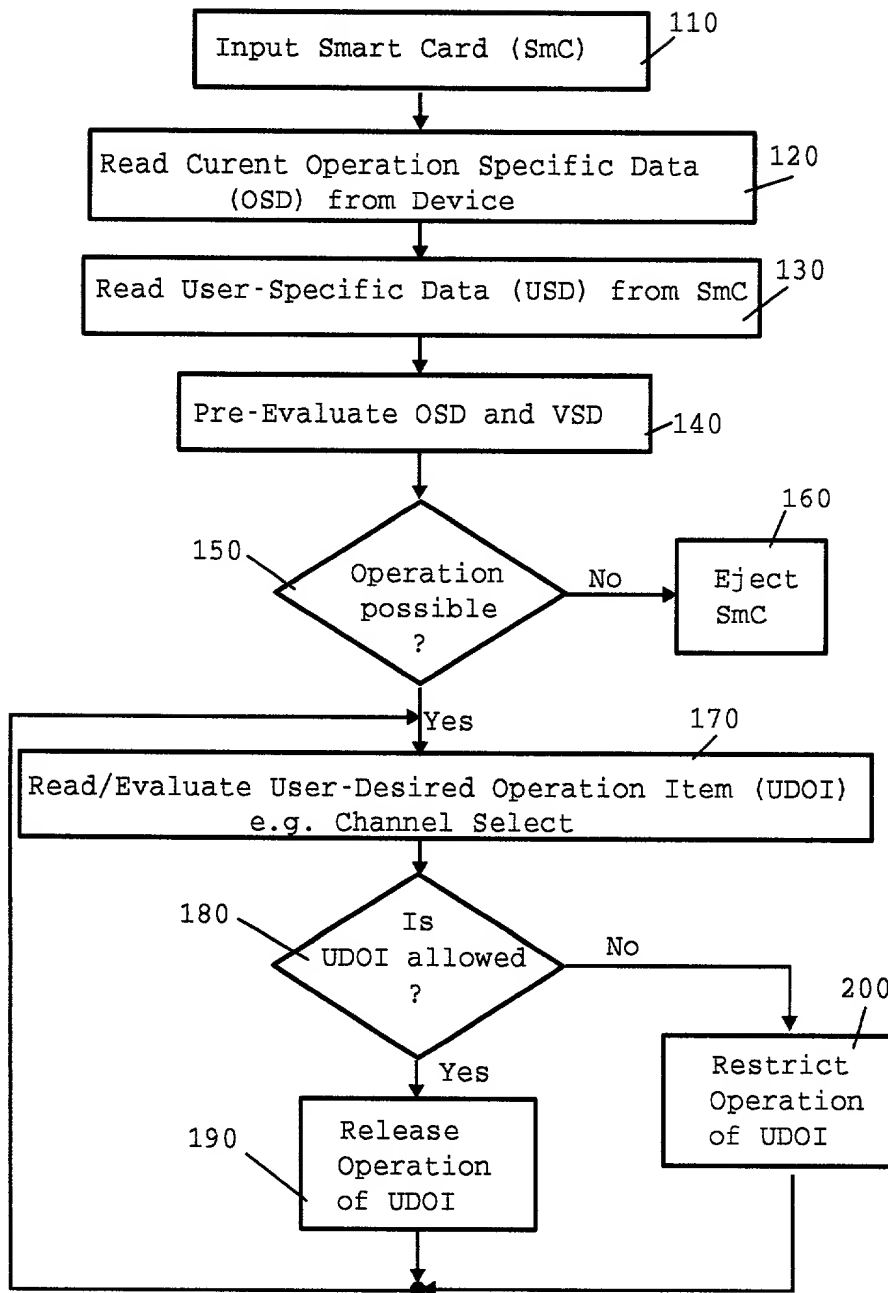22 card emerge dependent of the type of the device. (Fig. 1)

FIG. 1

FIG. 2

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

CONTROLLED USE OF DEVICES _____

the specification of which (check one)

__X__ is attached hereto.

_____ was filed on _____ as United States Application Number _____

      or PCT International Application Number _____

      and was amended on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, '119(a)-(d) or '365(b) of any foreign application(s) for patent or inventor's certificate, or '365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application, having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)   Priority Claimed

(Number)	(Country)	(Day/Month/Year Filed)	___ Yes ___ No
(Number)	(Country)	(Day/Month/Year Filed)	___ Yes ___ No
(Number)	(Country)	(Day/Month/Year Filed)	___ Yes ___ No

I hereby claim the benefit under 35 U.S.C. '119(e) of any United States provisional application(s) listed below.

(Application Number)	(Filing Date)
(Application Number)	(Filing Date)

I hereby claim the benefit under 35 U.S.C. '120 of any United States Application(s), or '365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States, or PCT International application in the manner provided by the first paragraph of 35 U.S.C. '112, I acknowledge the duty to disclose information material to the patentability of this application as defined in 37 CFR '1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith (list name and registration number).

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